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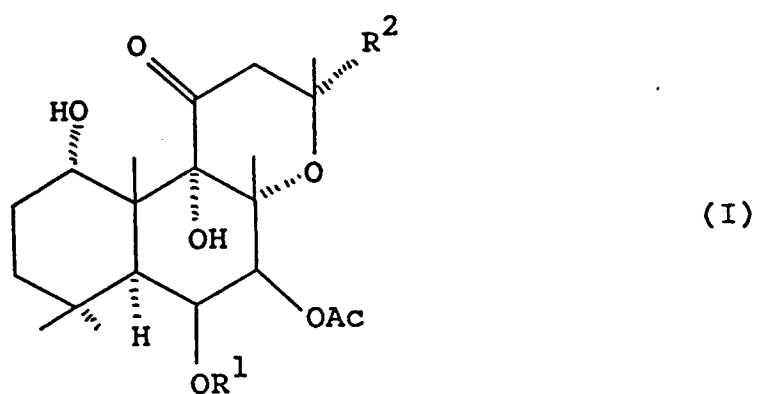
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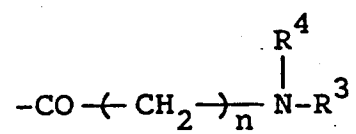
(54) **Novel pharmaceutical uses of forskolin derivatives.**

(57) The present invention relates to a platelet aggregation inhibiting or controlling agent, spasmolytic agent, therapeutic agent for skin ulcer, peripheral circulation improving agent for limbs and differentiation inducing and promoting agent which contain as active principle a forskolin derivative represented by the formula (I):

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wherein R¹ is a group represented by the formula



(wherein R³ and R⁴ are each hydrogen or lower alkyl group, or R³ and R⁴ may be combined to represent lower alkylene group which may have oxygen or nitrogen atom in the linking chain, and n is an integer of 1 to 5); R² represents hydrocarbon group having 2 to 3 carbon atoms; and Ac represents acetyl group, or a physiologically acceptable salt thereof.



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EUROPEAN SEARCH REPORT

Application Number

EP 91 10 4207

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
Y	MOLECULAR PHARMACOLOGY, vol. 31, no. 3, May 1982, pages 680-687; A.M. SIEGL et al.: "Inhibition of aggregation and stimulation of cyclic AMP generation in intact human platelets by the diterpene forskolin" * Whole article *	1-3	A 61 K 31/35
Y	NAUNYN-SCHMIEDEBERG'S ARCHIVES OF PHARMACOLOGY, vol. 331, no. 1, 1985, pages 119-121, Springer-Verlag; T. KARIYA et al.: "Effect of forskolin on platelet deaggregation and cyclic AMP generation" * Whole article *	1-3	
X	MEDICINAL RESEARCH REVIEWS, vol. 3, no. 2, April-June 1983, pages 201-219, John Wiley & Sons Inc.; N.J. DE SOUZA et al.: "Forskolin: A labdane diterpenoid with antihypertensive, positive inotropic, platelet aggregation inhibitory, and adenylate cyclase activating properties" * Whole article, espec. pages 208-210, 215, 216, 218 *	1-3	TECHNICAL FIELDS SEARCHED (Int. Cl.5) A 61 K
Y	BIOCHEMICAL PHARMACOLOGY, vol. 31, no. 24, 1982, pages 4071-4074, Pergamon Press Ltd., GB; S. ADNOT et al.: "Forskolin (a powerful inhibitor of human platelet aggregation)" * Whole article *	1-3	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 05-12-1991	Examiner GAC G.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			



CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claims:
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet -B-

- ☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☒ None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims,

namely claims: 1 - 3



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
Y	MOLECULAR PHARMACOLOGY, vol. 32, no. 1, 1987, pages 133-139; A. LAURENZA et al.: "Stimulation of adenylate cyclase by water-soluble analogues of forskolin" * Whole article * -----	1-3	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
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LACK OF UNITY OF INVENTION a priori

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims 1-3: Use of a forskolin derivative of the formula of claim 1 in the manufacture of a medicament for treating a disease caused by platelet aggregation.
2. Claims 4-6: Use of a forskolin derivative of the formula of claim 1 in the manufacture of a medicament for treating skin ulcer.
3. Claims 7-8: Use of a forskolin derivative of the formula of claim 1 in the manufacture of a medicament for treating vasospasm.
4. Claims 9-10: Use of a forskolin derivative of the formula of claim 1 in the manufacture of a medicament for treating a disease caused by undifferentiated cells.
5. Claims 11-13: Use of a forskolin derivative of the formula of claim 1 in the manufacture of a medicament for treating a disease caused by trouble in peripheral blood circulation in limbs.